

CaddyTig HF



**Bruksanvisning
Brugsanvisning
Bruksanvisning
Käyttöohjeet
Instruction manual
Betriebsanweisung
Manuel d'instructions**

**Gebruiksaanwijzing
Instrucciones de uso
Istruzioni per l'uso
Manual de instruções
Οδηγίες χρήσεως
Instrukcja obsługi**

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Rätt till ändring av specifikationer utan avisering förbehålles.
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 Rett til å endre spesifikasjoner uten varsel forbeholdes.
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1 DIRECTIVE

DECLARATION OF CONFORMITY

ENGLISH

Esab Welding Equipment AB, S-695 81 Laxå, Sweden, gives its unreserved guarantee that welding power source Caddy TIG HF having serial number 217 complies with standard EN 60974-1, in accordance with the requirements of directive 73/23/ EEA and addendum 93/68/ EEA and standard EN 50199 in accordance with the requirements of directive 89/336/ EEA and addendum 93/68/ EEA.

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2 SAFETY

Users of ESAB welding equipment have the ultimate responsibility for ensuring that anyone who works on or near the equipment observes all the relevant safety precautions. Safety precautions must meet the requirements that apply to this type of welding equipment. The following recommendations should be observed in addition to the standard regulations that apply to the workplace.

All work must be carried out by trained personnel well-acquainted with the operation of the welding equipment. Incorrect operation of the equipment may lead to hazardous situations which can result in injury to the operator and damage to the equipment.

1. Anyone who uses the welding equipment must be familiar with:
 - its operation
 - location of emergency stops
 - its function
 - relevant safety precautions
 - welding
2. The operator must ensure that:
 - no unauthorised person is stationed within the working area of the equipment when it is started up.
 - no-one is unprotected when the arc is struck
3. The workplace must:
 - be suitable for the purpose
 - be free from draughts
4. Personal safety equipment
 - Always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves.
 - Do not wear loose-fitting items, such as scarves, bracelets, rings, etc., which could become trapped or cause burns.
5. General precautions
 - Make sure the return cable is connected securely.
 - Work on high voltage equipment **may only be carried out by a qualified electrician.**
 - Appropriate fire extinguishing equipment must be clearly marked and close at hand.
 - Lubrication and maintenance must **not** be carried out on the equipment during operation.



WARNING



ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.

ELECTRIC SHOCK - Can kill

- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from earth and the workpiece.
- Ensure your working stance is safe.

FUMES AND GASES - Can be dangerous to health

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.

ARC RAYS - Can injure eyes and burn skin.

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

FIRE HAZARD

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby.

NOISE - Excessive noise can damage hearing

- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risk.

MALFUNCTION - Call for expert assistance in the event of malfunction.

READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHERS!



WARNING!

Read and understand the instruction manual before installing or operating.

3 INTRODUCTION

Caddy TIG HF is a welding power source based on the inverter technique, intended for welding with coated electrodes (MMA welding) and with infusible tungsten electrode in inert gas (TIG welding).

Caddy TIG HF is especially designed for high quality TIG welding due to a specific device that allows the striking of the arc without touching the metal surface with the electrode.

3.1 Technical data

	Caddy TIG HF
Performance MMA:	
at 25% duty cycle	150 A/26 V
at 60% duty cycle	115 A/24.6 V
at 100% duty cycle	100 A/24 V
Performance TIG:	
at 30% duty cycle	150 A/16 V
at 60% duty cycle	125 A/15 V
at 100% duty cycle	110 A/14.4 V
Setting range MMA/TIG	5-150 A
Open circuit voltage MMA/TIG	95 V/104 V
Mains supply:	
voltage	230 V AC $\pm 15\%$
frequency	50/60 Hz
fuse	16 A*
mains cable, area	3x1,5 mm ²
Enclosure class	IP 23C
Application class	S
Dimensions L x W x H	375 x 145 x 280 mm
Weight	5.9 kg

**When welding below 100 A in MMA a 10 A slow fuse is adequate..*

Duty cycle

The duty cycle refers to the time in per cent of a ten-minute period that you can weld at a certain load without overloading the welding power source.

Enclosure class

The **IP** code indicates the enclosure class, i. e. the degree of protection against penetration by solid objects or water. Equipment marked **IP 23C** is designed for indoor and outdoor use.

Application class

The symbol **S** indicates that the power source is designed for use in areas where there is an increased electrical hazard.

3.2 Equipment

The welding power source is delivered with mains cable (3 metres).

3.3 Field of application

The power source supplies direct current, which allows you to weld most alloyed and non-alloyed steels, stainless steels and cast iron.

MMA welding

Selecting the MMA welding with the selection switch and the led indication on the front panel, coated electrodes from Ø1.6 mm to Ø 3.25 mm and also many Ø 4,00 mm can be welded.

TIG-welding

TIG welding is particularly useful when high quality standards are required and when welding thin sheet.

Before using the Caddy TIG HF for TIG welding, it must be equipped with a TIG torch with trigger switch, a cylinder of argon, an argon regulator, tungsten electrodes and, if necessary, suitable filler metal.

Selecting the TIG process, in order to strike the arc, you only need to put the tip of the tungsten electrode near the workpiece and to press the trigger switch; an high frequency (HF) discharge will strike the arc.

When the TIG LIFT START welding process has been selected the arc ignition is obtained touching the workpiece with the tip of the tungsten electrode, pressing the trigger switch and lifting the electrode gently to establish the arc. In this way the short circuit current is maintained to a minimum level, in order to prevent the wear of the tungsten electrode, and to reduce contamination of tungsten in the weld pool.

4 INSTALLATION

WARNING

This product is intended for industrial use and for repair and maintenance welding. In domestic or office environment this product may cause radio interference. It is the responsibility of the user to take adequate precautions.

4.1 Placing

Place the machine so that there is nothing to prevent the cooling air from passing through it.

4.2 Connection

4.2.1 Mains connection

The rating plate, including connection data, is placed underneath the units.

Connect the welding power source to an earthed mains terminal.

Make sure the welding power source is connected for the correct mains voltage and properly fused.

- Mains voltage 230 V \pm 15%
- Mains frequency 50-60 Hz
- Fuse, slow 16 A
- Mains cable, area 3 x 1,5 mm²

4.2.2 Connection of welding and return cable in MMA

The welding power source has two power terminals, one plus and one minus pole, for the connection of the welding and the return cable. Connect the welding cable to the pole indicated on the package of the electrode to be used.

Connect the return cable to the other terminal. Fit the earth clamp of the return cable to the work-piece and make sure there is good contact between the work-piece and the return cable terminal on the welding power source.

4.2.3 Connection of TIG torch and return cable

Connect the power connector of the torch to the minus pole terminal of the power source. Connect the signal and the gas male connectors of the torch to the corresponding female connectors on the front side of the welding power source.

Connect the gas hose from the gas cylinders to the gas connector on the rear side of the machine.

5 OPERATION

General safety regulations for the handling of the equipment can be found on page 36. Read through before you start using the equipment!

5.1 Start-up

- Make sure that the mains cable is properly connected.
- Make sure that the welding cable or the connectors of the TIG torch and the earth clamp are properly connected.
- Start the welding power source by setting the mains switch to position 1.
- Select the welding process you want pressing on the process selection switch.



Electrode welding process

TIG LIFT START process

TIG HF START process.

Light on the corresponding led confirm the choice.

- Set the welding current, using the knob on the front panel of the power source and reading the current on the display.

Follow the instructions on the electrode package for the recommended welding current in MMA welding.

In TIG welding the current must be appropriate to the workpiece and the welding requirements.

For reducing the final crater in the weld pool is possible to select the ramp-down function with the selection switch on the right of the front panel and to change its value with the knob. After some seconds the control return to the welding current.

5.2 Overload protection

Caddy TIG HF is provided with a thermal cut-out to prevent overheating of the welding power source. In the event of overload the supply voltage is interrupted, the yellow led on the front goes on and an error code starts blinking on the display accordingly to the follow:

E01 = overtemperature

E03 = overload with respect to allowed duty cycle

In case of error E01 or E03 resetting takes place automatically as soon as the welding power source has cooled down.

Error code E20 could also be displayed; in that case switch off and on again the machine: if E20 is still displayed, call Service.

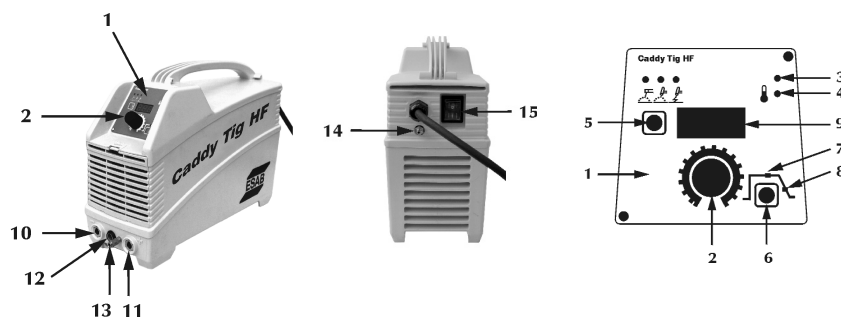
5.3 Mains voltage compensation




Caddy TIG HF both has mains voltage compensation, which means that + 15% fluctuation in the supply voltage produces a negligible variation in the welding voltage.

5.4 Fan operation

In order to reduce noise, no load consumption and metallic powder movement, Caddy TIG HF has a special device that control the fan velocity; the higher is the internal temperature the faster is the fan speed.

5.5 Controls and connections



1. Control panel
2. Knob for adjusting the welding parameters
3. Green indicating led (correct mains connection)
4. Yellow indicating led (overheating)
5. Selection switch: MMA mode (light on  led); TIG LIFT START mode (light on  led); TIG HF START mode (light on  led)
6. Welding parameters and set up switch
7. Green led (welding current is selected)
8. Green led (ramp down time is selected)
9. Display
10. Terminal, minus pole, for connecting welding or return cable or TIG torch.
11. Terminal, plus pole, for connecting welding or return cable
12. Torch switch connector
13. Torch gas connector
14. Input gas connector for the gas hole from the argon cylinder
15. Mains switch

5.6 Set-up menu

Pressing the set-up button for 2s you access to the set-up menu confirmed by a central "0" on the display.

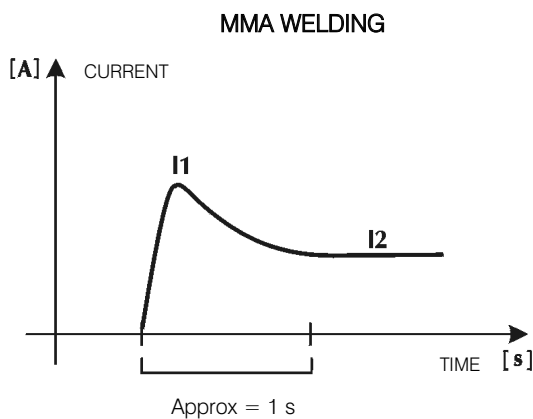
Via the knob you vary the set-up line, via the set up button you confirm the required line, via the knob you vary the parameter value, an so on.

If line "1" is confirmed with the button you return to the factory-set values.

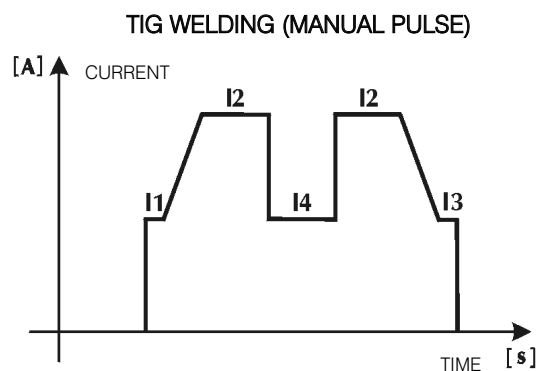
If line "0" is confirmed with the button you quit set-up and you save the parameters you have changed.

Here is the complete list of the set-up parameters:

N.	Welding Mode	Description
0	TIG/MMA	Save and exit
1	TIG/MMA	Reset and return to pre-set values
2	TIG	Pre-gas time (s), 0.0s-25.0s. Pre-set value = 0.1s
3	TIG	Start current (% of welding current), 0% - 500%. Pre-set value= 50%.
4	TIG	Slope-up time (s), 0.0s-10.0 s. Pre-set value = 0.0s.
5	TIG	The second welding current value (%of welding current) in TIG MANUAL PULSE, 0-500%. Pre-set value = 50%.
6	TIG	Final current (%of welding current), 0-500%. Pre-set value = 50%.
7	TIG	Post-gas time (s). 0.0-25.0. In 0.0 you have an automatic Post-gas time. Pre-set value = 0.0s.
8	TIG	Trigger modes, 0=2T, 1=4T, 2=MANUAL PULSE. Pre-set value = 0.
10	MMA	Hot-start (% added to welding current), 0-500%. Pre-set value = 80%.
11	MMA	Arc-force (% added to welding current), 0-500%. Pre-set value = 30%.



I1 = HOT START (ADJ. 0-500% OF I2 + I2)
I2 = SET CURRENT (0-150 A)



I1 = START CURRENT (ADJ. 0-500% OF I2)
I2 = SET CURRENT (0-150 A)
I3 = FINAL CURRENT (ADJ. 0-500% OF I2)
I4 = PULSE CURRENT (MANUAL PULSE)

6 MAINTENANCE

6.1 Cleaning

Normally it is sufficient to blow the welding power source clean regularly using dry compressed air (reduced pressure), and to clean the filter in the front regularly.

In dusty and dirty environment the welding power source should be cleaned at shorter intervals.

7 FAULT TRACING

7.1 Possible faults and measures to take

Type of fault	Measure
No arc is generated by the welding power source.	<ul style="list-style-type: none"> • Make sure the mains switch is on. • Check that the welding and return cables are properly connected. • Make sure the welding current set is correct. • Verify that the welding process is correctly selected
The welding current is interrupted in the course of welding.	<ul style="list-style-type: none"> • Check if the thermal cut-out has tripped (the yellow indicating led on the front panel is on). • Check the mains fuse.
The thermal cut-out trips frequently.	<ul style="list-style-type: none"> • Check that the filter is not packed with dust. • Check that the ratings of the welding power source have not been exceeded (overload of the power source).
Poor welding result.	<ul style="list-style-type: none"> • Check that the welding and return cables are properly connected. • Make sure the welding current set is correct. • Check that there is nothing wrong with the electrodes. • Verify that the welding process is correctly selected

8 ORDERING OF SPARE PARTS

When ordering a spare part, please state the type and serial number of the machine as well as number of the spare part, according to the spare parts list.

This will simplify dispatch and ensure you get the right part.